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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,931	12/16/2003	John Below	RIX #2	5342

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EXAMINER

HANAN, DEVIN J

ART UNIT	PAPER NUMBER
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3745

DATE MAILED: 01/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/736,931

Applicant(s)

BELOW, JOHN

Examiner

Devin Hanan

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9 and 10 is/are rejected.
- 7) ☒ Claim(s) 7 and 8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the details of the concavely spaced cavities of the spaced reciprocating members must be shown or the feature canceled from claim 4. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 - 6, 9 and 10 are rejected under 35 U.S.C. 102(b) as being disclosed by Gardner (U.S. Patent 3,071,014).

Gardner discloses a housing defining a housing interior (12);

a swash plate drive shaft (14) disposed in said housing interior and rotatably mounted (16) relative to said housing about an axis of rotation; a swash plate (20, 22, 24, 26) mounted on said swash plate drive shaft angularly disposed relative to said axis of rotation and located in said housing interior, said swash plate having an outer swash plate portion (26, 28) surrounding said swash plate drive shaft and generally freely rotatably moveable about and relative to said swash plate drive shaft (on bearing 28), said outer swash plate portion having a contact surface; and

a plurality of spaced reciprocating members (40, 44) mounted for reciprocable axial movement relative to said housing and engaging the contact surface of said outer swash plate portion, the locations of contact between said contact surface and said reciprocating members changing when said outer swash plate said swash plate drive shaft portion rotates about said swash plate drive shaft (contact occurs between element 26 and element 44).

Regarding claim 2, Gardner discloses a swash plate comprising a ball bearing assembly (24, 26, 28), said outer swash plate portion comprising an outer race (26, 28) of said ball bearing assembly.

Regarding claim 3, Gardner discloses an outer race that has a convexly curved outer peripheral wall (26) adjacent to said contact surface.

Regarding claim 4, Gardner discloses spaced reciprocating members (40, 42, 44, 46) with cavities (36) receiving said outer race defined by concavely curved walls engaged by the convexly curved outer peripheral wall (26) of said outer race, the concavely curved cavity walls and convexly curved outer peripheral wall of said outer race conforming in shape (along the outer circumference of the swash plate and the inner circumference of the reciprocating members).

Regarding claim 5, Gardner discloses a convexly curved outer peripheral wall (26) of the outer race that comprises a segment of an imaginary sphere (the outer surface of the swash plate does form a sphere).

Regarding claim 6, Gardner discloses the outer race having a central diametric axis and wherein the axis of rotation of said swash plate drive shaft is intersected by the central diametric axis of said outer race substantially at the center of said imaginary sphere (the center of the sphere formed by the swash plate lies on the axis of the driveshaft).

Regarding claim 10, Gardner discloses a ball bearing assembly that has an inner race (24) and ball bearings disposed between the inner race and the outer race (26, 28).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner as applied to claim 1 above, and further in view of Arai (U.S. Patent 5,184,536).

Gardner discloses all of the claimed elements, including spaced reciprocating members (40, 42, 44,46) that are fluid pistons (col. 1 lines 12-15), but does not disclose that the fluid pistons are fluid compressor pistons.

However Aria teaches of the use of the same style pistons, for the purpose of both pumping fluid, as in a compressor, or being acted on by fluid, as in a motor. This dual use shows fluid compressor pistons to be interchangeable with fluid motor pistons.

Since the swash plate motor of Aria and the swash plate motor of Gardner are functionally equivalent in the art, the teaching disclosed by Aria would have been recognized in the pertinent art of Gardner. It would have been obvious at the time the invention was made to one having ordinary skill in the art to use the fluid pistons of Gardner as fluid compressor pistons as taught by Aria because they are interchangeable.

Claim Objections

Claims 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

References

The reference to Ota et al. (U.S. Patent 6,446,540) was cited to show similar teachings of mounting the swash plate on a ball bearing.

The reference to Hayashi et al. (U.S. Patent 6,283,009) was cited as another reference showing the interchangeability of swash plate compressor pistons and swash plate motor pistons.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devin Hanan whose telephone number is 571-272-6089. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on 571-272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Devin Hanan
Patent Examiner
Art Unit 3745



EDWARD K. LOOK
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1/19/05